

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (ii) TITLE OF INVENTION: MAMMALIAN CELL SURFACE ANTIGENS; RELATED REAGENTS
- (iii) NUMBER OF SEQUENCES: 9
- (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRESSEE: DNAX Research Institute
 - (B) STREET: 901 California Avenue
 - (C) CITY: Palo Alto
 - (D) STATE: California
 - (E) COUNTRY: USA
 - (F) ZIP: 94304-1104
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 08/911,423
 - (B) FILING DATE: 14-AUG-1997
 - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 60/023,419
 - (B) FILING DATE: 16-AUG-1996
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 60/027,901
 - (B) FILING DATE: 07-OCT-1996
- (viii) ATTORNEY/AGENT INFORMATION:
 - (A) NAME: Ching, Edwin P.
 - (B) REGISTRATION NUMBER: 34,090
 - (C) REFERENCE/DOCKET NUMBER: DX0612K
 - (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: 650-852-9196
 - (B) TELEFAX: 650-496-1200
- (2) INFORMATION FOR SEQ ID NO:1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1073 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: CDS
(B) LOCATION: 68..751

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

CTCGAGATCC ATTGTGCTGG AAAGGGAACT CCTGAAATCA GCCGACAGAA GACTCAGGAG									
AAGCACT ATG GGG GC Met Gly Al 1	A TGG GCC ATG C a Trp Ala Met L 5								
GTG CTG GAC CTA GG Val Leu Asp Leu Gl 15									
CCT GGC AAG GTT CA Pro Gly Lys Val Gl	n Asn Gly Ser G		Thr Arg Cys C						
CTG TAT GCT CCA GG Leu Tyr Ala Pro Gl 50									
GTC ACA CCT GAG TA Val Thr Pro Glu Ty 65									
CAC TAC CCC TGC CA His Tyr Pro Cys Gl 80									
GTG TTT GGC TTC CG Val Phe Gly Phe Ar 95									
GGT CGT GAC GGT CA Gly Arg Asp Gly Hi 11	s Cys Arg Leu T		Cys Ser Gln P						
TTT CTC ACC ATG TT Phe Leu Thr Met Ph 130	e Pro Gly Asn L								
CCG GAG CCA CTG CC Pro Glu Pro Leu Pr 145									
CTG GTC ATG GCT GC Leu Val Met Ala Al 160									

Leu His Ile Trp Gln Leu Arg Arg Gln His Met Cys Pro Arg Glu Th 175 180 185 19										
CAG CCA TTC GCG GAG GTG CAG TTG TCA GCT GAG GAT GCT TGC AGC TTG Gln Pro Phe Ala Glu Val Gln Leu Ser Ala Glu Asp Ala Cys Ser Ph 195										
CAG TTC CCT GAG GAG GAA CGC GGG GAG CAG ACA GAA GAA										
CTG GGG GGT CGG TGG CCA TGAGGCCTGG TCTTCCTCTG TGCCCCAAGC Leu Gly Gly Arg Trp Pro 225										
CAGACGCTAC AAGACTTGCC CAGCTATACC CTTGGTGAGA GCAGGGGCCA TGCTCTG	GCAC 841									
CCTTCCCTGG GCCTGGCCCT GCTCCCCTCA ACAGTGGCGG AAGTGGGTGT ATGAGAGCGG										
TGAGTTACGA TTGGGCCCTA TGGCTGCCTT TCTCATTTGA CAGCTCTGTT GGAGTAG	GGGT 961									
CTTTGGGCCC ACCAAGAGCA CCACGTTTAG CACAAGATCT TGTACAAGAA TAAATAC	CTTG 1021									
TTTAGTAACC TGAAAAAAAA AAAAAAAAGG GCGGCCGCGG AGGCCGAATT CC	1073									
(2) INFORMATION FOR SEQ ID NO:2: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 228 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear										
(A) LENGTH: 228 amino acids (B) TYPE: amino acid										
(A) LENGTH: 228 amino acids (B) TYPE: amino acid										
(A) LENGTH: 228 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear										
(A) LENGTH: 228 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein	eu									
(A) LENGTH: 228 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2: Met Gly Ala Trp Ala Met Leu Tyr Gly Val Ser Met Leu Cys Val Le										
(A) LENGTH: 228 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2: Met Gly Ala Trp Ala Met Leu Tyr Gly Val Ser Met Leu Cys Val Le 1 5 10 15 Asp Leu Gly Gln Pro Ser Val Val Glu Glu Pro Gly Cys Gly Pro Gl	У									
(A) LENGTH: 228 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2: Met Gly Ala Trp Ala Met Leu Tyr Gly Val Ser Met Leu Cys Val Le 1 5 10 15 Asp Leu Gly Gln Pro Ser Val Val Glu Glu Pro Gly Cys Gly Pro Gl 20 25 30 Lys Val Gln Asn Gly Ser Gly Asn Asn Thr Arg Cys Cys Ser Leu Ty	y vr									

Pro Cys Gln Pro Gly Gln Arg Val Glu Ser Gln Gly Asp Ile Val Phe 85 90 95

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•			•		•													
	Gly	Phe	Arg	Cys 100	Val	Ala	Cys	Ala	Met 105	Gly	Thr	Phe	Ser	Ala 110	Gly	Arg		
	Asp	Gly	His 115	Cys	Arg	Leu	Trp	Thr 120	Asn	Cys	Ser	Gln	Phe 125	Gly	Phe	Leu		
	Thr	Met 130	Phe	Pro	Gly	Asn	Lys 135	Thr	His	Asn	Ala	Val 140	Cys	Ile	Pro	Glu		
	Pro 145	Leu	Pro	Thr	Glu	Gln 150	Tyr	Gly	His	Leu	Thr 155	Val	Ile	Phe	Leu	Val 160		
	Met	Ala	Ala	Cys	Ile 165	Phe	Phe	Leu	Thr	Thr 170	Val	Gln	Leu	Gly	Leu 175	His		
	Ile	Trp	Gln	Leu 180	Arg	Arg	Gln	His	Met 185	Cys	Pro	Arg	Glu	Thr 190	Gln	Pro		
-	Phe	Ala	Glu 195	Val	Gln	Leu	Ser	Ala 200	Glu	Asp	Ala	Cys	Ser 205	Phe	Gln	Phe		
	Pro	Glu 210	Glu	Glu	Arg	Gly	Glu 215	Gln	Thr	Glu	Glu	Lys 220	Cys	His	Leu	Gly		
	Gly 225	Arg	Trp	Pro													٠	
	(2)		SE(QUENCA) LI B) TI	CE CI ENGTI YPE: [RANI	SEQ HARAG H: 10 nucl DEDNI	CTER 006 l leic ESS:	ISTIC base acic sinc	CS: paim	rs								
		(ii)	MOI	LECUI	LE T	YPE:	cDNA	A										
		(ix)	•	A) NA	AME/I	KEY: ION:		723										
		(xi)	SEÇ	QUENC	CE DI	ESCRI	EPTIC	ON: S	SEQ I	ID NO	0:3:							
														TGC Cys				48
														GGG Gly 30				96
														GAC Asp				144

					ACG Thr												192
GAG Glu 65																;	240
					TGC Cys												288
GGC Gly					TCC Ser												336
ATC Ile					GGG Gly												384
AAA Lys																	432
GGG Gly 145																	480
GAG Glu					CTG Leu												528
GTC Val																	576
AGG Arg																	624
CCG Pro																	672
CGG Arg 225																	720
GTG Val	TGAC	GCĊT(GC (CGTC	CTCC	GG GC	GCCAC	CCGA	C CGC	CAGCO	CAGC	CCCI	rccc	CAG			773
GAGC	TCC	CCA (GCCC	GCAG	GG GC	CTCTC	GCGTT	CT(GCTCT	rggg	CCGC	GCCC	CTG (CTCC	CCTGGC		833
AGCA	GAA(STG (GTG	CAGGA	AA GO	STGGC	CAGTO	G ACC	CAGCO	CCC	TGG	ACCAT	rgc <i>i</i>	AGTT(CGGCGG	3	893
CCGC	TCT	AAA (GATO	CCAAC	GC TI	racg1	TACGO	C GTO	GCATO	GCGA	CGT	CATAC	CT (CTTC	TATAGI	r :	953

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 241 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:
- Met Ala Gln His Gly Ala Met Gly Ala Phe Arg Ala Leu Cys Gly Leu

 1 10 15
- Ala Leu Cys Ala Leu Ser Leu Gly Gln Arg Pro Thr Gly Gly Pro
 20 25 30
- Gly Cys Gly Pro Gly Arg Leu Leu Gly Thr Gly Thr Asp Ala Arg
 35 40 45
- Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu 50 60
- Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln Pro Glu Phe His 65 70 75 80
- Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His Pro Cys Pro Pro 85 90 95
- Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe Gly Phe Gln Cys 100 105 110
- Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His Glu Gly His Cys
 115 120 125
- Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu Thr Val Phe Pro 130 135 140
- Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly Ser Pro Pro Ala 145 150 155 160
- Glu Pro Leu Gly Trp Leu Thr Val Val Leu Leu Ala Val Ala Ala Cys 165 170 175
- Val Leu Leu Thr Ser Ala Gln Leu Gly Leu His Ile Trp Gln Leu 180 185 190
- Arg Ser Gln Cys Met Trp Pro Arg Glu Thr Gln Leu Leu Glu Val 195 200 205
- Pro Pro Ser Thr Glu Asp Ala Arg Ser Cys Gln Phe Pro Glu Glu Glu 210 215 220

Arg	Gly	Glu	Arg	Ser	Ala	Glu	Glu	Lys	Gly	Arg	Leu	Gly	Asp	Leu	Trp
225					230					235					240

Val

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 723 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

ATGGCNCARC	AYGGNGCNAT	GGGNGCNTTY	MGNGCNYTNT	GYGGNYTNGC	NYTNYTNTGY	60
GCNYTNWSNY	TNGGNCARMG	NCCNACNGGN	GGNCCNGGNT	GYGGNCCNGG	NMGNYTNYTN	120
YTNGGNACNG	GNACNGAYGC	NMGNTGYTGY	MGNGTNCAYA	CNACNMGNTG	YTGYMGNGAY	180
TAYCCNGGNG	ARGARTGYTG	YWSNGARTGG	GAYTGYATGT	GYGTNCARCC	NGARTTYCAY	240
TGYGGNGAYC	CNTGYTGYAC	NACNTGYMGN	CAYCAYCCNT	GYCCNCCNGG	NCARGGNGTN	300
CARWSNCARG	GNAARTTYWS	NTTYGGNTTY	CARTGYATHG	AYTGYGCNWS	NGGNACNTTY	360
WSNGGNGGNC	AYGARGGNCA	YTGYAARCCN	TGGACNGAYT	GYACNCARTT	YGGNTTYYTN	420
ACNGTNTTYC	CNGGNAAYAA	RACNCAYAAY	GCNGTNTGYG	TNCCNGGNWS	NCCNCCNGCN	480
GARCCNYTNG	GNTGGYTNAC	NGTNGTNYTN	YTNGCNGTNG	CNGCNTGYGT	NYTNYTNYTN	540
ACNWSNGCNC	ARYTNGGNYT	NCAYATHTGG	CARYTNMGNW	SNCARTGYAT	GTGGCCNMGN	600
GARACNCARY	TNYTNYTNGA	RGTNCCNCCN	WSNACNGARG	AYGCNMGNWS	NTGYCARTTY	660
CCNGARGARG	ARMGNGGNGA	RMGNWSNGCN	GARGARAARG	GNMGNYTNGG	NGAYYTNTGG	720
GTN						723

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 228 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Met Gly Ala Phe Arg Ala Leu Cys Gly Leu Ala Leu Leu Cys Ala Leu 1 5 10 15

Ser Leu Gly Gln Arg Pro Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg 20 25 30

Leu Leu Gly Thr Gly Thr Asp Ala Arg Cys Cys Arg Val His Thr

Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp 50 55 60

Asp Cys Met Cys Val Gln Pro Glu Phe His Cys Gly Asp Pro Cys Cys 65 70 75 80

Thr Thr Cys Arg His His Pro Cys Pro Pro Gly Gln Gly Val Gln Ser 85 90 95

Gln Gly Lys Phe Ser Phe Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly
100 105 110

Thr Phe Ser Gly Gly His Glu Gly His Cys Lys Pro Trp Thr Asp Cys 115 120 125

Thr Gln Phe Gly Phe Leu Thr Val Phe Pro Gly Asn Lys Thr His Asn 130 135 140

Ala Val Cys Val Pro Gly Ser Pro Pro Ala Glu Pro Leu Gly Trp Leu 145 150 155 160

Thr Val Val Leu Leu Ala Val Ala Ala Cys Val Leu Leu Leu Thr Ser 165 170 175

Ala Gln Leu Gly Leu His Ile Trp Gln Leu Arg Lys Thr Gln Leu Leu 180 185 190

Leu Glu Val Pro Pro Ser Thr Glu Asp Ala Arg Ser Cys Gln Phe Pro 195 200 205

Glu Glu Glu Arg Gly Glu Arg Ser Ala Glu Glu Lys Gly Arg Leu Gly 210 215 220

Asp Leu Trp Val 225

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 232 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7: Met Gly Ala Phe Arg Ala Leu Cys Gly Leu Ala Leu Leu Cys Ala Leu Ser Leu Gly Gln Arg Pro Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Gly Thr Gly Thr Asp Ala Arg Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln Pro Glu Phe His Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His Pro Cys Pro Pro Gly Gln Gly Val Gln Ser Gln Gly Lys Ser Trp Arg Cys Leu Trp Glu Ser Thr Gln Ala Arg Gly Ser Thr Arg Ala Arg Gly Arg Ala Arg Gly His Arg Cys Pro Ala Arg 120 Thr Cys Gly Val Trp Gly Pro Glu Ser Cys Glu Ala Gly Gln Ala Arg 130 135 Pro Cys Ser Gly Thr Thr Gly His Glu Ala Leu Gly Val Ser Cys Pro 150 155 Cys Phe Leu Ser Leu Gly Phe Ser Ile Gln His Glu Gly Cys Glu Asn 170 Pro Ala Gly Arg Trp Gly Arg Val Pro Gly Ala Val Trp Leu Ser Gly 180 Pro Gly His Pro Ser Cys Leu Ser Ser Pro His Thr Glu Arg Ala Cys 200 Pro Val Pro Pro Gly Val Leu Ser Gly Ala Trp Gly Cys Thr Leu Phe 220 210 215 Trp Lys Glu Gln Leu Lys Ser Ser

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 311 amino acids

230

- (B) TYPE: amino acid(C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Met Gly Ala Phe Arg Ala Leu Cys Gly Leu Ala Leu Leu Cys Ala Leu 1 5 10 15

Ser Leu Gly Gln Arg Pro Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg 20 25 30

Leu Leu Gly Thr Gly Thr Asp Ala Arg Cys Cys Arg Val His Thr 35 40 45

Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp 50 55 60

Asp Cys Met Cys Val Gln Pro Glu Phe His Cys Gly Asp Pro Cys Cys 65 70 75 80

Thr Thr Cys Arg His His Pro Cys Pro Pro Gly Gln Gly Val Gln Ser 85 90 95

Gln Gly Lys Phe Ser Phe Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly 100 105 110

Thr Phe Ser Gly Gly His Glu Gly His Cys Lys Pro Trp Thr Asp Cys 115 120 125

Thr Gln Phe Gly Phe Leu Thr Val Phe Pro Gly Asn Lys Thr His Asn 130 135 140

Ala Val Cys Val Pro Gly Ser Pro Pro Ala Glu Pro Leu Gly Trp Leu 145 150 155 160

Thr Val Val Leu Leu Ala Val Ala Ala Cys Val Leu Leu Leu Thr Ser 165 170 175

Ala Gln Leu Gly Leu His Ile Trp Gln Leu Arg Ser Gln Cys Met Trp 180 185 190

Pro Arg Gly Leu Ser Gln Pro Gly Ala Gly Arg Trp Glu His Gly Cys 195 200 205

Leu Leu Thr Val Ala Pro Leu Gln Arg Pro Ser Cys Cys Trp Arg Cys 210 215 220

Arg Arg Pro Lys Thr Pro Glu Ala Ala Ser Ser Pro Arg Lys Ser 225 230 235 240

Gly Ala Ser Asp Arg Gln Arg Arg Gly Gly Trp Glu Thr Cys Gly

245 250 255

Cys Glu Pro Gly Arg Pro Pro Gly Pro Pro Thr Ala Ala Ser Pro Ser 260 265 270

Pro Gly Ala Pro Gln Ala Ala Gly Ala Leu Arg Ser Ala Leu Gly Arg 275 280 285

Ala Leu Leu Pro Trp Gln Gln Lys Trp Val Gln Glu Gly Gly Ser Asp 290 295 300

Gln Arg Pro Gly Pro Cys Ser 305 310

- (2) INFORMATION FOR SEQ ID NO:9:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

His His His His His 1 5